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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,545	10/02/2003	Eric Chao Xu	ANDRPR/385/US	9559

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EXAMINER	
KINNEY, ANNA L	

ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/677,545	XU, ERIC CHAO	
	Examiner	Art Unit	
	Anna Kinney	1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43* is/are rejected.

7)☒ Claim(s) *18 and 36* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/25/04-12/9/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed December 9, 2005 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

Claims 18 and 36 are objected to because of the following informalities: in line 3 of each claim, the word "superatmospheric" has been misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12-16 and 30-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The concentrations recited in claims 12-16 and 30-34 do not provide the percentage basis, i.e., weight or volume. The Examiner has considered these percentages to be by weight, based on the dry lignocellulosic material, for purposes of examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-11, 17-29, and 35-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prusas (U.S. 4,486,267) in view of Haynes et al (U.S. Patent 6,743,332).

With respect to claim 1, Prusas discloses an alkaline peroxide mechanical pulping process comprising the steps of: feeding a lignocellulosic material into a first press (col. 5, lines 5-12); pressing the lignocellulosic material (col. 5, lines 13-19); discharging the lignocellulosic material from the first press (col. 5, lines 13-19); impregnating the lignocellulosic material discharged from the first press with a first alkaline peroxide pretreatment solution (col. 5, lines 20-44) and maintaining the impregnation for a first reaction time (col. 5, line 65 – col. 6, line 7); feeding the impregnated lignocellulosic material to a refiner having a rotating disc (col. 7, lines 1-4); and refining the impregnated lignocellulosic material to form a primary pulp having a temperature of at least about 80°C (col. 7, lines 1-4 and 8-11).

Prusas does not disclose expressly that the refiner is superatmospheric; adding alkaline peroxide to an intermediate line; and discharging and retaining the pulp in a retention vessel. Although Prusas does not disclose expressly that the refiner has an inlet and a casing, at the time of the invention, it would have been obvious to a person

of ordinary skill in the art that a refiner would have these features to introduce pulp to and retain pulp in a refiner, and since these are standard features of refiners known in the art.

Haynes et al discloses delivering a stream of primary pulp from the superatmospheric casing (col. 5, lines 36-41) to an intermediate line (Fig. 2, item 224) while the primary pulp temperature is at least about 80°C; adding an alkaline peroxide intermediate line solution to the stream of primary pulp within the intermediate line (col. 12, lines 49-53) while the primary pulp temperature is at least about 80°C (col. 5, lines 12-20 and 41-45, and Fig. 2, item 262); mixing the intermediate line solution and the stream of primary pulp to form a reaction mixture in the intermediate line (col. 5, lines 41-45); discharging the reaction mixture having a temperature of at least about 80°C into a retention vessel (col. 8, lines 10-14); retaining the reaction mixture in the retention vessel to produce a bleached material (col. 13, line 64 – col. 14, line 8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a superatmospheric refiner and add an alkaline peroxide solution to an intermediate line, followed by discharge and retention in a vessel, as described by Haynes et al in the pulping process of Prusas et al to obtain the invention as specified in claim 1. The motivation would have been more effective use of hydrogen peroxide, less scaling of process equipment, an increase in pulp yields, and lower pollution levels entering waste water facilities (col. 3, lines 55-63).

With respect to claim 17, Prusas and Haynes et al are applied as in the 35 USC 103 rejection of claim 1, above. Prusas further discloses a chemimechanical pulping

process (col 2, lines 35-39) and processing the primary pulp further to a secondary pulp (col. 7, lines 9-11). The Examiner considers the chemical bleaching pretreatment solution to be the alkaline peroxide pretreatment solution of claim 1, and the retention tower to be the retention vessel of claim 1.

With respect to claim 18, Prusas and Haynes et al are applied as in the 35 USC 103 rejection of claim 1, above. Prusas discloses pretreatment (col. 5, lines 5-12). Haynes et al discloses a solution inlet port (e.g., chemical addition point, Fig. 2, item 262) and a reaction period (col. 14, lines 1-7).

With respect to claim 21, Prusas and Haynes et al are applied as in the 35 USC 103 rejection of claim 1, above.

With respect to claim 35, Prusas and Haynes et al are applied as in the 35 USC 103 rejection of claim 17, above.

With respect to claim 36, Prusas and Haynes et al are applied as in the 35 USC 103 rejection of claim 18, above.

With respect to claims 42 and 43, Prusas and Haynes et al are applied as in the 35 USC 103 rejection of claim 36, above. Prusas discloses more than one refining steps afer impregnation and before bleaching (col. 7, lines 9-13).

With respect to claims 2 and 22, Prusas discloses feeding the lignocellulosic material that has been impregnated with the first pretreatment solution for a first reaction time, into a second press (col. 6, lines 8-16); pressing and discharging the lignocellulosic material from the second press (col. 6, lines 8-16); impregnating the lignocellulosic material discharged from the second press with a second alkaline

peroxide pretreatment solution and maintaining the second impregnation for a second reaction time (col. 8, lines 33-36, 20-21, and col. 7, lines 40-54).

Prusas does not disclose expressly adding a peroxide refiner solution at the refiner, the pressure of the refiner casing, or a separator.

With respect to claims 3, 19, 23, and 37, Haynes et al discloses adding an alkaline peroxide refiner solution to the lignocellulosic material at the refiner (col. 12, lines 49-53).

With respect to claims 4 and 28, Haynes et al discloses maintaining the superatmospheric casing at a pressure of 68.9 to 276 kPa (i.e., 10-40 psi; col. 11, lines 60-64), which contains one specific point within the claimed range of at least about 240 kPa.

With respect to claim 5, Haynes et al discloses that the step of mixing (Fig. 3, item 336) is immediately followed by introducing the mixture into a separator (Fig. 3, item 338) and the separated pulp is then discharged into said retention vessel (Fig. 3, item 348).

With respect to claims 6, 20, 24, and 38, Haynes et al discloses adding the intermediate line solution immediately after a blow valve (col. 15, lines 8-10).

With respect to claims 7 and 39, Haynes et al discloses adding the intermediate line solution immediately prior to the separator (col. 13, lines 51-64 and col. 15, lines 8-23).

With respect to claim 25, Haynes et al is applied as in the rejections of claims 6, 7, and 21, above. The Examiner notes the addition point immediately prior to the separator in Fig. 2, item 262.

With respect to claim 26, Haynes et al is applied as in the rejections of claims 6, 7, and 21, above. The Examiner notes the addition point at the separator in col. 13, lines 60-64).

With respect to claim 27, Haynes et al is applied as in the rejections of claims 6, 7, and 21, above. The Examiner notes the addition point immediately after the separator in Fig. 3, item 344 (col. 13, lines 57-59).

With respect to claims 40 and 41, Prusas and Haynes are applied as in the rejections to claims 36, 26, and 27, above.

With respect to claim 8, Prusas discloses temperatures in refining in excess of 100°C, which contains one specific point within the claimed range of 90°C and 155°C, and a consistency of about 10 to 35%, preferably about 20 to 30%, which contains three specific points within the claimed range of about 20 to about 60% (col. 7, lines 5-13). At the time of the invention, it would have been obvious to a person of ordinary skill in the art that the temperature and consistency of the pulp delivered to an intermediate line would be about the same as the conditions in the refiner absent a step of dilution, dewatering, heating, or cooling.

With respect to claims 9 and 10, Haynes et al discloses that the reaction mixture is retained in the retention vessel at a temperature of about 85°C to about 160°C (col. 5, lines 12-15), which contains one specific point within the claimed range of about 60°C to

about 95°C for claim 9 and of about 85°C to about 95°C for claim 10, and a consistency of greater than 3% (col. 9, lines 53-55), which encompasses the claimed range of about 20% to about 40% for claim 9 and about 30% for claim 10.

With respect to claims 11 and 29, Prusas discloses that the impregnation solution contains alkali, peroxide, and stabilizer (col. 5, lines 20-61). Prusas does not disclose the intermediate line solution.

Haynes et al discloses that the intermediate line solution contains alkali, peroxide, and stabilizer (col. 5, lines 41-45)

Haynes does not disclose expressly the temperature of the intermediate line solution. However, Prusas discloses alkali treatment at temperatures ranging from about 20°C to about 80°C (col. 5, lines 62-64), which contains two specific points within the claimed range of less than about 80°C. In the absence of evidence that the intermediate line solution is heated in excess of 80°C, it would have been obvious to a person of ordinary skill in the art at the time of the invention that the intermediate line solution would have a temperature comparable to ambient or the alkali treatment temperature disclosed by Prusas.

Claims 12-16 and 30-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prusas and Haynes et al as applied to claims 2 and 22 above, and further in view of Textor (U.S. Patent 3,023,140), Sandstrom et al (U.S. Patent 4,270,976), and Xu (Xu, Eric C., "Chemical Treatment in Mechancial Pulping – Part 3; Pulp Yield and Chemical Pretreatment", 1998 Pulping Conference, TAPPI Proceedings, pp. 391-402).

The transition term "contains" is open-ended and must include at least the amounts of the reagents recited, but does not preclude other reagents or larger amounts of reagent. Therefore, the Examiner has considered the amounts claimed to indicate a lower end of a range of concentrations for each reagent.

With respect to claims 12-16, Prusas discloses that the first impregnation solution contains from about 0.5-4% by weight hydrogen peroxide (col. 5, lines 30-34), which contains the claimed limitation endpoints of 0.5% for claim 14 and 15 and 0.6% for claim 16. Prusas further discloses that chelating agents such as DTPA are preferably used when peroxide is used to prevent decomposition of the peroxide (col. 5,lines 45-54). Prusas discloses expressly concentrations of 0.5% DTPA (col. 5, lines 54-56) and 0.25% DTPA (col. 7, lines 43-45), which suggests a range of 0.25 to 0.5%, which contains the claimed limitation endpoints of 0.3% for claims 12 and 14, 0.5% for claim 13, and could contain the claimed limitation of 0.2% for claims 13 (2^{nd} impregnation solution) and 15, assuming that the value is truncated.

Haynes et al discloses an acceptable alkalinity to hydrogen peroxide ratio of about 0.25 to about 3 on a weight basis (col. 7, lines 2-4). The alkalinity limitation endpoints of claims 12-16 all fall within this range. Haynes also discloses adding a chelating agent, such as DTPA, in an amount of up to 10% by weight (col. 7, lines 7-18), which encompasses the claimed limitation endpoints of claims 12-16. Haynes further discloses use of sodium silicate up to about 10% by weight (col. 7, lines 32-33), which encompasses the limitation endpoints of claims 12-16. Additionally, Haynes et al discloses a suitable amount of hydrogen peroxide is 0.45% to 9% (10 to about 200

pounds per ton) based on dry pulp (col. 6, lines 62-64), which encompasses the limitation endpoints for claims 12-16, and also discloses a residual peroxide level of greater than 0.7% (col. 10, line 67 to col. 11, line 2), which also encompasses the limitation endpoints for claims 12-16.

Prusas and Haynes et al do not disclose expressly the use of magnesium sulfate or residual alkalinity.

Textor discloses an alkaline peroxide mechanical pulping process (col. 3, line 73 to col. 4, line 1) in which magnesium sulfate is used to stabilize the peroxide bleach liquor (col. 3, lines 8-9). Textor discloses expressly a concentration of .05% magnesium sulfate (col. 3, lines 4-6), which contains one specific point within the claimed range of the 1st impregnation solutions of claims 14, 15, and 16, and within the 2nd impregnation fluids of claims 15 and 16.

Sandstrom et al discloses an alkaline peroxide mechanical pulping process (col. 1, lines 9-20) in which magnesium sulfate is added to the bleach liquor in an amount of 0.1 to 0.5% of the dry lignocellulosic material, which encompasses the claimed limitation endpoints of the second impregnation solutions of claims 12 and 13, and the intermediate line solutions of claims 12, 13, and 14. The range disclosed by Sandstrom et al also contains two specific points within the claimed ranges of claim 14, 1st and 2nd impregnation solutions, claim 15, 1st and 2nd impregnation solutions and intermediate line solution, and claim 16, 1st and 2nd impregnation solutions.

Xu, provided by applicant, discloses an total alkalinity residual of 0.1% in a 1st impregnation stage and 1.3% in a 2nd impregnation stage (p. 397, Table II, rows 4 and

7), and a total "total alkalinity" residual of up to 3.1 (p. 398, Table III, row 17), which contains at least one specific point within the claimed ranges of claims 12-15, intermediate line solutions.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to optimize the amount of magnesium sulfate to obtain the most efficient use of the reagent as a stabilizer for the peroxide solution.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use magnesium sulfate as described by Textor and Sandstrom et al and to provide for a residual alkalinity as described by Xu to obtain the invention as specified in claims 12-16.

The motivation would have been that magnesium sulfate stabilizes the peroxide bleach liquor (Textor, col. 3, lines 8-9), and peroxide consumes part of the alkali, leaving less alkali to attack the hemicellulose, considering that alkali is commonly known to be responsible for most of the yield losses in an alkaline chemical mechanical pulping of hardwood (Xu, p. 399, lines 1-6).

With respect to claims 30-34, Prusas and Haynes et al are applied as in the rejections to claims 12-16, above.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 21 and 36 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 14 of copending Application No. 10/483,648 in view of Haynes et al.

Claim 1 of '648 discloses an alkaline peroxide mechanical pulping process comprising feeding, pressing, discharging, and impregnating steps as in instant claim

21. Claim 14 of '648, which includes the limitations of claim 1 of '648, discloses the second step of feeding of instant claim 21. Although claim 1 of '648 does not disclose a separate step of refining, '648 does disclose that the material is refined in the mixing step of the same claim. Claim 1 of '648 discloses a step of discharging pulp, adding an alkaline peroxide solution, mixing the solution and the pulp (i.e., lignocellulosic material), and retaining the mixture in a retention vessel (i.e., high consistency tower).

'648 does not disclose expressly that the pulp is discharged to an intermediate line wherein the alkaline peroxide solution is added and the solution and pulp are mixed.

Haynes et al discloses discharging a stream of primary pulp from a superatmospheric casing (col. 5, lines 36-41) to an intermediate line (Fig. 2, item 224); adding an alkaline peroxide intermediate line solution to the stream of primary pulp within the intermediate line (col. 12, lines 49-53); and mixing the intermediate line solution and the stream of primary pulp to form a reaction mixture in the intermediate line (col. 5, lines 41-45).

With respect to instant claim 1, '648 and Haynes et al are applied as in the double-patenting rejection to instant claim 21, above. '648 does not disclose pulp temperatures of at least about 80°C in the refiner, the intermediate line, and the retention vessel. Haynes et al discloses pulp temperatures of at least about 80°C from the refiner, in the intermediate line (col. 5, lines 12-20 and 41-45, and Fig. 2, item 262), and discharging into the retention vessel (col. 8, lines 10-14).

With respect to instant claim 36, '648 and Haynes et al are applied as in the double-patenting rejection to instant claim 1, above. '648 does not disclose expressly

Haynes et al discloses discharging a stream of primary pulp from a superatmospheric casing (col. 5, lines 36-41) to an intermediate line (Fig. 2, item 224); adding an alkaline peroxide intermediate line solution to the stream of primary pulp within the intermediate line (col. 12, lines 49-53); and mixing the intermediate line solution and the stream of primary pulp to form a reaction mixture in the intermediate line (col. 5, lines 41-45); and delivering the intermediate line solution and primary pulp mixture to a retention tower (Fig. 3, item 348).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a superatmospheric refiner and add an alkaline peroxide solution to an intermediate line having an inlet port, mix the pulp and the solution, deliver and retain in a vessel, as described by Haynes et al, in the pulping process of '648 to obtain the invention as specified in claim 35. The motivation would have been more effective use of hydrogen peroxide, less scaling of process equipment, an increase in pulp yields, and lower pollution levels entering waste water facilities (col. 3, lines 55-63).

This is a provisional obviousness-type double patenting rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents 4,294,653, 4,756,799, and 4,311,553 were cited in the PCT Search Report. '653 was used to support impregnation followed by two refiners with a separator and bleaching. '553 was used to support impregnation with peroxide, refining the pulp, and adding peroxide to the refiner. '799 was used to support

and inlet port or a reaction period. Haynes et al discloses an inlet port (e.g., chemical addition point, Fig. 2, item 262) and a reaction period (col. 14, lines 1-7).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a superatmospheric refiner and add an alkaline peroxide solution to an intermediate line having an inlet port, mix the pulp and the solution, discharge and retain in a vessel, as described by Haynes et al, under the temperature and time conditions described by Haynes et al in the pulping process of '648 to obtain the invention as specified in claims 1, 21, and 36. The motivation would have been more effective use of hydrogen peroxide, less scaling of process equipment, an increase in pulp yields, and lower pollution levels entering waste water facilities (col. 3, lines 55-63).

This is a provisional obviousness-type double patenting rejection.

Claim 35 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 25 of copending Application No. 10/483,648 in view of Haynes et al. Claim 25 of '648 discloses a chemimechanical pulping process comprising the steps of feeding, pressing, discharging, impregnating, and processing as in instant claim 35. Although claim 25 of '648 does not disclose expressly a separate step of refining, the claim does disclose that the material is refined. Claim 25 of '648 further discloses a feeding, mixing, discharging, adding, and delivering steps as in instant claim 35, but does not disclose expressly a superatmospheric casing, an intermediate line, or that the pulp is discharged to the intermediate line, or that the adding, mixing, and delivering steps occur in or from the intermediate line.

a screw press. Although all three references are relevant to the claims, the Examiner has adequately rejected the claims with other art for this first action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Kinney whose telephone number is (571) 272-8388. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ALK

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